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AUTHOR	Madsen, Millard C.
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ABSTRACT

An experimental task with accompanying apparatus was developed for use in the study of developmental and cultural differences in the cooperative-competitive behavior of children in a small Mexican town and in California. Two groups of 20 Mexican children (aged 7-8 and 10-11), from an elementary school in a town in Baja, California, Mexico, were used; the Anglo American sample included 3 groups of 24 children (aged 4-5, 7-8, and 10-11) from day-care centers in Los Angeles. The children were tested using a 2-person cooperation-competition marble-pull game designed for the study. A pair of children of the same sex and culture was seated, 1 child at each end of the game table; the children then played for a marble placed in a holder. In the "tug-of-war situation," cooperative behavior resulted in 1 child getting a marble while competitive behavior resulted in neither child getting a marble. At the conclusion of 10 trials for each pair of children, informal interviews were held to determine, for children who competed maladaptively (competitively), the extent to which they were aware of possible interacting methods. Two instructional trials followed the interview, and subjects completed a second series of 10 trials. Results indicated a higher level of cooperation among Mexican than among Anglo American children and an increase in nonadaptive competition with age among the Anglo American children. (NQ)

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DEVELOPMENTAL AND CROSS-CULTURAL DIFFERENCES IN THE COOPERATIVE AND COMPETITIVE BEHAVIOR OF YOUNG CHILDREN

Millard C. Madsen

University of California, Los Angeles

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ABSTRACT

A two-person experimental task was developed for use in the study of age and cultural differences in the cooperative-competitive behavior of children in a small Mexican town and in California. The results indicate a higher level of cooperation among Mexican than among Anglo-American children and an increase in nonadaptive competition with age among the Anglo-American children.

Developmental and Cross-Cultural Differences in the Cooperative and Competitive Behavior of Young Children[1]

Millard C. Madsen[2]

University of California, Los Angeles

Previous experiments (Madsen, 1967; Shapira & Madsen, 1969; Madsen & Shapira, 1970) have demonstrated the existence of substantial differences in the degree to which children of different subcultures cooperate or compete on an experimental task. In a recent study of 7-9 year old children, Kagan & Madsen (in press) found Anglo-Americans to be far more competitive than were children in a small Mexican town. Mexican-American 7-9 year olds were approximately midway between the other two groups in their degree of competitive responding. The above study also included 4-5 year old Anglo-American and Mexican-American children. The results indicated a substantially higher level of competitiveness among 7-9 than among 4-5 year old children within both cultural groups.

These findings of both developmental and cultural differences on this dimension of behavior are of sufficient importance to warrant additional verification and extension. In the present study, therefore, Anglo-American and Mexican children were again compared with respect to their degree of competitive vs cooperative responding, but on a new experimental task. The apparatus used in the study was designed so that

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[2]Requests for reprints should be sent to Millard C. Madsen, Psychology Department, University of California, 405 Hilgard Avenue, Los Angeles, California 90024.

cooperative interaction between pairs of children was adaptive and competitive interaction was maladaptive in terms of reward attainment. It was predicted, on the basis of previous studies, that Mexican children would cooperate adaptively, and that Anglo-American children would compete maladaptively in a situation in which both alternatives are possible, and that the magnitude of this difference would increase with age. An additional purpose of the study was to introduce a two person cooperation-competition apparatus that is appropriate for use with young children.

Method

Subjects

The Mexican children were elementary school students in a small town (pop. 800) of Nuevo San Vicente, located 54 miles south of Ensenada, Baja California, Mexico. The economy is largely agricultural with some men working small plots of land and others being employed as workers on larger farms. The houses are varied in construction including concrete block, wood, and adobe. Although there are a few relatively modern homes, the majority are quite primitive, many having dirt floors and no modern conveniences. The town also has a number of small businesses located along the highway that runs through the center of town.

The study was conducted during the summer months in Los Angeles and the children were tested at day care centers in which they were enrolled. The sample was purposefully restricted to Anglo-American children.

The Mexican sample included 20 children of age 7-8 and 20 between 10 and 11. The Anglo-American sample included 24 children age 4-5, 24 7-8, and 24 age 10-11. Each age group in each culture was

equally represented by sex. In the absence of any subsequent differences due to sex, however, this variable is not discussed further.

Apparatus and Procedure

The marble pull game that was designed for this study is illustrated

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Insert Figure 1 about here

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in Figure 1. The marble pull consists of a rectangular table (43 cm. high, 15 cm. wide, and 62 cm. long) with an eyelet screwed into each end. Strings strung through the eyelets connect to a plexiglass marble holder that is initially placed in the center of the table. When the marble holder is pulled to either end of the table, the marble will drop into a cup, thus being delivered to one of the two participants who are seated at each end of the table. This is a simple tug-of-war situation. The unique feature of the apparatus, and that which makes competition maladaptive, is the fact that the marble holder is held together by magnetic inserts. When Ss pull against each other the marble holder breaks apart and the marble rolls into a groove along the edge of the table. The table top declines slightly from the center to the sides for this purpose.

Pairs of children of the same sex were seated in small chairs, one at each end of the game table. They were then told that they were to play a game in which they could get marbles. The experimenter placed a marble in the marble holder and moved it until the marble dropped into first one child's and then the other child's cup. The children were told that they could keep the marbles that dropped into their cup, and that they would play for 10 marbles. They were not told that

the marble holder would break apart if they pulled simultaneously. At the beginning of each of the 10 trials the experimenter placed a marble in the holder and said "go". If the marble holder broke and the marble rolled into the groove, the marble was removed and the children were informed that neither would get the marble because it did not drop into a cup.

At the conclusion of 10 trials E conducted an informal interview with Ss. The interview was an attempt to determine, for those Ss who competed maladaptively, the extent to which they were aware of other possible methods of interacting. The key inquiry was, "If you wanted to get more marbles into your cup, how could you do it?" The interview was followed by two trials on which Ss were alternately instructed to drop their string and allow the other S to obtain the marble. Ten additional trials then followed in which the procedure was similar to the first 10 trials.

Results

The mean number of marbles obtained by culture and age is presented in Table 1. The results are so clear that statistical testing was not necessary. The Anglo-American children showed a clear age difference on the first 10 trials in that the 4-5 year group obtained a mean of 5.3

Insert table 1 about here

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marbles as compared with a mean of .3 for the 7-8 and .2 for the 10-11 year olds. Three pairs at the younger age obtained no marbles while 10 pairs at both older ages received no marbles on the first 10 trials.

The cultural differences on the first 10 trials were even more profound. For the 7-8 and 10-11 age groups combined, 13 of the 20 Mexican pairs obtained either 9 or 10 marbles, while the highest number of marbles obtained by any of the 24 Anglo-American pairs of these ages was three. Twenty pairs in this group obtained no marbles.

The focus of the interview, following the first no trials, was on those pairs who competed maladaptively. The interview results, therefore, are mainly pertinent for the 7-8 and 10-11 year Anglo-Americans who were almost completely competitive. At least one member of seven of the 12 7-8 year pairs and at least one member of 10 of the 12 10-11 year pairs verbalized the possibility of taking turns as a method of obtaining marbles during the interview.

The second ten trials, after the instructional trials, indicated an increased number of marbles obtained for all subject groups. The interesting result, however, is that even after instruction, Anglo-American pairs failed to obtain the marble on 44% of trials and 10-11 Anglo-American pairs failed to obtain a marble on 62% of the trials.

Discussion

The age differences among the Anglo-American age groups are in accord with those previously found by Kagan & Madsen (in press) with a different experimental technique. Using yet another technique, McClintock and Nuttin (1969) have demonstrated an increase in competitive responding with age for children in both the United States and Belgium. An age trend toward increased competition with age in the United States is therefore, at least under some conditions, quite well established. If the tasks used in these experiments are thought of as problems to be solved by rational processes, and the development of these processes,

and the development of these processes in the Piagetian sense is a concomitant of development, then we would expect more rational, mutually adaptive, problem solving with increasing age. The fact that, in the United States, more younger than older children are successful in solving the problems in such a way as to maximize reward indicates that the motivation to compete, for the older children, is so strong that it overcomes any tendency to interact in mutual self-interest even if the intellectual capacity to do so is present. The strength of the competitive motive is further attested to by the fact that even after the majority of children in the 10-11 group had verbalized the necessity for taking turns, and then received a practice turn-taking trial, the majority of children continued to compete. It may be suggested that these children care little for marbles. However, when asked, they most frequently indicated that they wanted the marbles and were trying to get them. It is obvious, however, that they were not trying to get the marbles, but rather to win the marbles. The experience of watching these children compete on trial after trial, when doing so insures that nothing is gained and everything is lost, causes one to pause and reflect on the desirability of excessive positive reinforcement of the competitive motive during the developing years.

The behavior of the Mexican children was in sharp contrast with the behavior of the Anglo-American children of the same age. Not only was there far more cooperative interaction, but the competitive responses, when they did occur, were far less vigorous.

There are two interesting hypotheses that can be put forward to account for the apparent differences in the psychological functioning of the two cultural groups. The first is simply that the Mexican

children develop as rational problem solvers while the U.S. children develop such a high level of competitive motivation that behavior is irrational in conflict-of-interest situations.

A second hypothesis is apparent from the fact that the Mexican children of age 10-11 behaved quite similarly to the youngest Anglo age group. According to the two stage theory of moral development of Piaget (1932), children of age 4-5, if interacting cooperatively are behaving on the basis on an heteronomous morality, a morality of constraint based on external authority. It is not until the child is 7 or 8 years or older that he begins to develop what Piaget calls an autonomous morality based on logical principles of reciprocity and justice. Autonomous morality is held to develop concurrently with the child's ability to distinguish between his own motives and perceptions and those of another. That role taking in this sense is indeed a developmental characteristic is well documented by the work of Flavell and his associates (1969). The possibility exists that the psychological basis for the cooperative behavior of the older Mexican children as well as the youngest Anglo-American group is based on a heteronomous rather than an autonomous sense of morality. Within this framework, it is also possible to speculate that the older Anglo-American children have developed the intellectual capacity for autonomous moral behavior, but use this capacity, and the ability to take the role of the other, for competitive rather than cooperative purposes. What has developed in the Anglo-American children in this, as well as in related studies, appears more like an autonomous morality of competition rather than of cooperation.

The present results do not allow for an easy advocacy of the above or other possible hypotheses. It is clear that more experimental inquiry

into the psychological basis of the cooperative and competitive behavior of children is necessary before results such as those in the present study are easily interpreted, or that value judgments about the development of differences in cooperative-competitive behavior in different cultures can easily be made.

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Table 1

Mean Cooperative Trials

Age	Mexico Trials 1-10	Mexico Trials 11-20	United States Trials 1-10	United States Trials 11-20
4-5	---	---	5.3	7.9
7-8	6.9	10.0	.3	5.6
10-11	5.8	8.9	.2	3.8

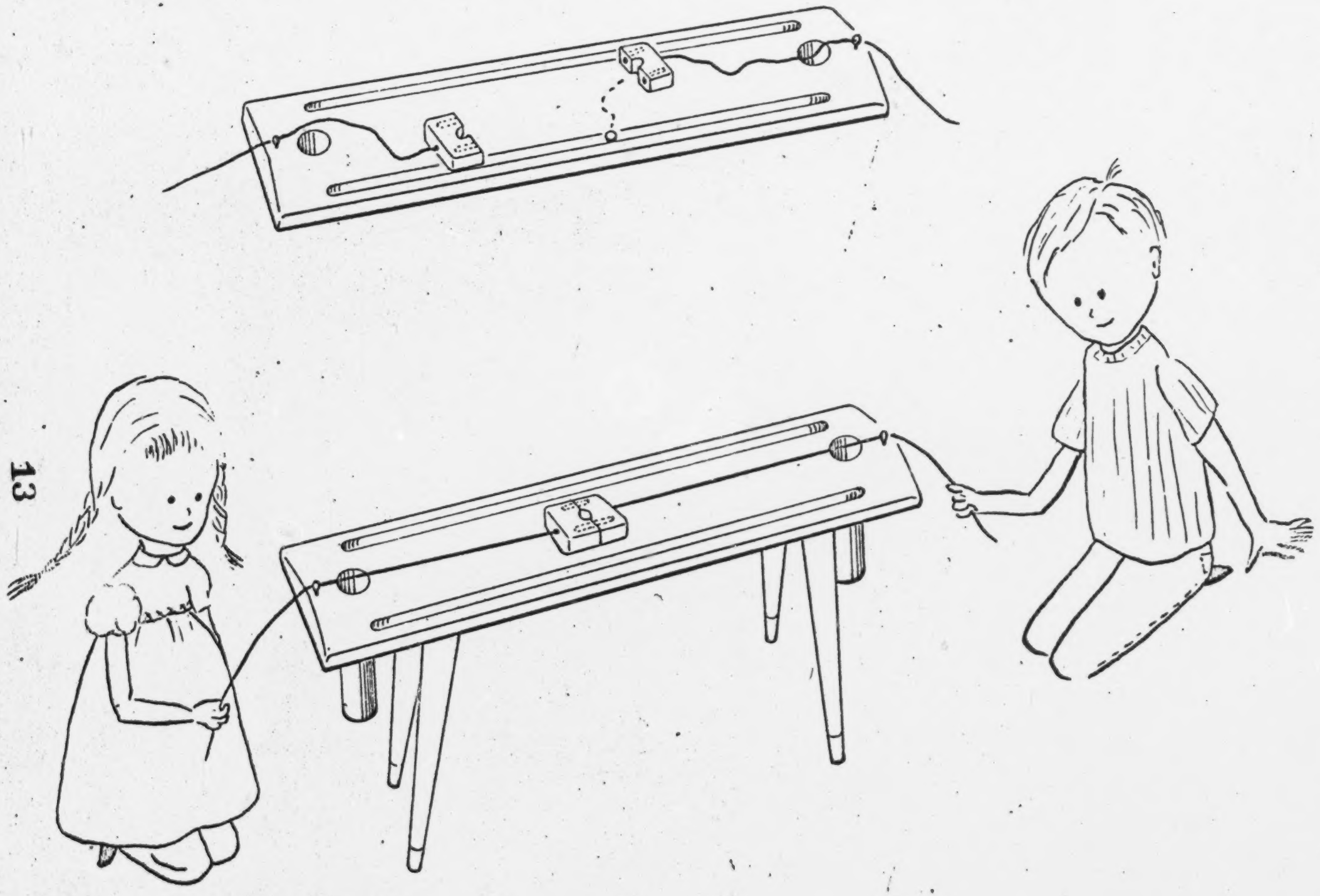

Figure 1 Marble-pull game